We are asked to determine the equation for the function with the following three properties:

1. There is a single x-intercept at the origin (this is what we did not consider ☹)
2. There are two asymptotes at $x = -2$ and $x = -5$
3. The function passes through the point $(6, -\frac{3}{4})$

Let's try to construct this function from scratch. We'll start by just having our function equal some generic constant c such that

$$f(x) = c.$$

Now, since we have an x-intercept at $x = 0$, we need this function to equal 0 when $x = 0$; in other words, we want $f(0) = 0$. We can get this by multiplying our function by x, giving us

$$f(x) = cx,$$

and we can see that if $x = 0$, then $f(x) = 0$.

Now, we have two asymptotes at $x = -2$ and $x = -5$, meaning this function is not defined at these two values. Remember, an asymptote occurs when we have a 0 in the denominator, so we want to modify our function to get

$$f(x) = \frac{cx}{(x+2)(x-5)}.$$

We can see that if we plug in either $x = -2$ or $x = 5$, $f(x)$ will have a 0 in the denominator.

Finally, we have to determine the constant c. Since we want our function to pass through the point $(6, -\frac{3}{4})$, we need a c such that $f(6) = -\frac{3}{4}$. We just have to plug 6 into $f(x)$, set the function equal to $-\frac{3}{4}$, and solve for c:

$$\begin{aligned} -\frac{3}{4} &= \frac{6c}{(6+2)(6-5)} \\ -\frac{3}{4} &= \frac{3}{4}c \\ c &= -1 \end{aligned}$$

We now have our final equation, given by

$$f(x) = -\frac{x}{(x+2)(x-5)}.$$

Graphing this function, which can be seen in Figure 1, gives us the desired result.

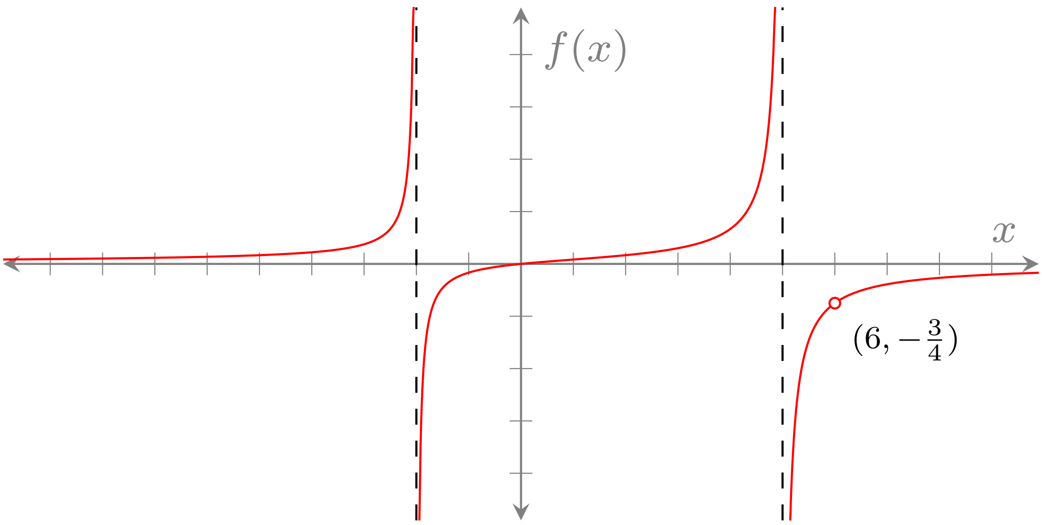

Figure 1: Plotting $f(x) = -\frac{x}{(x+2)(x-5)}$.